

## CLAIMS

What is claimed is:

1. A system that facilitates rendering of data in an industrial automation environment, comprising:

a component that receives a request to initiate a browser session;

a web server; and

a HMI rendering component that generates a browser-based HMI within the browser session.

2. The system of claim 1, the HMI rendering component comprising a customization component that permits customization of a browser-based HMI.

3. The system of claim 1, the HMI rendering component adapted to generate a plurality of browser-based HMIs for rendering on a plurality of devices.

4. The system of claim 1, the HMI rendering component comprising an artificial intelligence component, the browser-based HMI generated at least in part upon inferences made by the artificial intelligence component regarding a most-desirable rendering.

5. The system of claim 1, the HMI rendering component comprising a memory that stores data related to at least one of a user, a browser-based HMI, and a device.

6. The system of claim 5, the memory comprising at least one of volatile memory and non-volatile memory.

7. The system of claim 1, the browser-based HMI rendered on at least one of a fixed HMI, a tethered portable HMI, and a wireless HMI.
8. The system of claim 1, the HMI rendering component comprising an authentication component that verifies information is from a trusted source.
9. The system of claim 1, further comprising a virtual private network (VPN) that facilitates secure transmission of data.
10. The system of claim 1, wherein the browser and the web server employ at least one of hypertext transfer protocol (HTTP) and transmission control protocol/Internet protocol (TCP/IP).
11. The system of claim 1, the HMI rendering component continuously receives data associated with the automated industrial environment.
12. The system of claim 11, the HMI rendering component renders a HMI in browser format in real-time.
13. The system of claim 1, the HMI rendering component automatically updates the HMI upon a change of state in the industrial automation environment.
14. A method that facilitates rendering a browser-based HMI to a device, comprising:
  - receiving a session request from a user device;
  - requesting a HMI from a server;
  - determining parameters for rendering a HMI to an external device;
  - processing data received from an industrial environment; and
  - rendering a HMI in browser format.

15. The method of claim 14, further comprising customizing a browser-based HMI.
16. The method of claim 14, further comprising storing data associated with at least one of a user, a device, and a browser-based HMI.
17. The method of claim 16, further comprising rendering libraries to permit selection of components within the rendered libraries for customizing a browser-based HMI.
18. The method of claim 14, further comprising authenticating a session request from a device.
19. The method of claim 18, further comprising providing a password to at least partially authenticate the session request.
20. The method of claim 18, further comprising providing a personal identification number to at least partially authenticate the session request.
21. The method of claim 14, further comprising employing artificial intelligence techniques to make inferences regarding at least one of a user, a device, and a most suitable browser-based rendering of a HMI.
22. The method of claim 14, further comprising encrypting data transmissions.
23. The method of claim 22, the data transmissions encrypted *via* a virtual private network (VPN).

24. The method of claim 14, further comprising employing at least one hypertext transfer protocol (HTTP) to effectuate rendering the HMI in browser format.

25. The method of claim 14, further comprising employing at least one transmission control protocol/Internet protocol (TCP/IP) to effectuate rendering the HMI in browser format.

26. The method of claim 14, further comprising rendering the browser-based HMI to a plurality of devices.

27. The method of claim 14, further comprising rendering a plurality of browser-based HMIs to a plurality of devices.

28. The method of claim 14, further comprising rendering a plurality of browser-based HMIs to a single device.

29. The method of claim 14, further comprising automatically updating a HMI rendered in browser format upon the occurrence of a change of a state in an automated industrial environment.

30. The method of claim 14, further comprising continuously receiving data associated with the automated industrial environment.

31. The method of claim 30, further comprising rendering the HMI in browser format in real-time.

32. The method of claim 14, further comprising transmitting data continuously and asynchronously.

33. The method of claim 14, further comprising transmitting unsolicited data from at least one server to at least one specific client.

34. A system that facilitates rendering a browser-based HMI to a device, comprising:

means for receiving a session request from a device;

means for requesting a HMI from a server; and

means for generating a browser-based HMI within a browser session upon receiving the session request.

35. The system of claim 34, further comprising means for storing information related to at least one of a user, a device, and a browser-based HMI.

36. The system of claim 34, further comprising means for making inferences regarding at least one of a user, a device, and a most suitable browser-based rendering of a HMI, the browser-based HMI generated based at least in part on the inferences.

37. The system of claim 34, further comprising means for customizing a browser-based HMI.

38. The system of claim 34, further comprising means for encrypting data transmissions.

39. The system of claim 34, further comprising means for transmitting requests using at least one of hypertext transfer protocol (HTTP) and transmission control protocol/internet protocol (TCP/IP).

40. The system of claim 34, further comprising means for automatically updating the browser-based HMI in response to a change in a state of an industrial environment.

41. The system of claim 34, further comprising receiving a continuous stream of data from an automated industrial environment.

42. The system of claim 41, further comprising means for rendering a browser-based HMI in real-time.

43. The system of claim 34, further comprising means for transmitting data asynchronously.

44. The system of claim 34, further comprising means for transmitting unsolicited data to a specific client.